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IS 3347-4-1 (1988): Dimensions for porcelain transformer bushings for use in lightly polluted atmospheres: Part 4 24 kV bushings, Section 1: Porcelain parts [ETD 6: Electrical Insulators and Accessories]



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Indian Standard

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DIMENSIONS FOR
PORCELAIN TRANSFORMER BUSHINGS
FOR USE IN LIGHTLY POLLUTED ATMOSPHERES

PART 4 24 kV BUSHINGS

Section 1 Porcelain Parts

(Second Revision)

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AMENDMENT NO. 1 MAY 1993
TO
IS 3347 (Part 4/Sec 1) : 1988 DIMENSIONS FOR
PORCELAIN TRANSFORMER BUSHINGS FOR USE IN
LIGHTLY POLLUTED ATMOSPHERES
PART 4 24 AND 27 kV BUSHINGS
Section 1 Porcelain Parts
(Second Revision)

(Page 5, Fig. 3, informal table, Dimension B) — Substitute '51' for '50'.

(ET 06)

Reprography Unit, BIS, New Delhi, India

Indian Standard

DIMENSIONS FOR PORCELAIN TRANSFORMER BUSHINGS FOR USE IN LIGHTLY POLLUTED ATMOSPHERES

PART 4 24 kV BUSHINGS**Section 1 Porcelain Parts***(Second Revision)***0. FOREWORD**

0.1 This Indian Standard (Part 4/Sec 1) (Second Revision) was adopted by the Bureau of Indian Standards on 24 June 1988, after the draft finalized by the Electrical Insulators and Accessories Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 This part (Part 4) of the standard covers dimensions of porcelain transformer bushings for use in lightly polluted atmospheres with the object of ensuring their interchangeability. To avoid multiplicity of sizes, the dimensions given are only for those ratings (voltage and current) which are being used appreciably. This part comprises two sections issued as two separate standards. This section (Sec 1) covers porcelain parts of the bushings whereas the dimensions of the metal parts to go with those porcelain parts are covered in Section 2 of this standard.

0.3 This standard (Part 4/Sec 1) was first issued in 1965. The first revision was taken up in 1973 with a view to simplify the manufacture of the porcelain parts on large scale by permitting an alternative shape of their top petticoat in respect of all the ratings covered in this standard. This second revision has been undertaken:

- a) to align the dimensions with current national and international practices, and
- b) to incorporate the new classification of polluted atmospheres given in IS : 2099-1986*.

0.4 The dimensions given in this standard have been arrived at after full consideration of the available sizes and an examination of the relevant merits of different types of bushings. Detailed dimensions have been given with a view to achieving maximum economy in the manufacture of the bushings.

0.5 The bushings are rated in terms of the highest system voltage (*see* IS : 2099-1986*). The

dimensions of the bushings for other voltages are given in following parts of this standard:

IS : 3347 Dimensions for porcelain transformer bushings for use in lightly polluted atmospheres:

Part 1 Up to and including 1 kV

Section 1 Porcelain parts

Section 2 Metal parts

Part 2 3-6 kV bushings

Section 1 Porcelain parts

Section 2 Metal parts

Part 3 17.5 kV bushings

Section 1 Porcelain parts

Section 2 Metal parts

Part 5 36 kV bushings

Section 1 Porcelain parts

Section 2 Metal parts

Part 6 72.5 kV bushings

Section 1 Porcelain parts

Section 2 Metal parts

Part 7 123 kV bushings

Section 1 Porcelain parts

Section 2 Metal parts

Part 8 52 kV bushings

Section 1 Porcelain parts } *Under*

Section 2 Metal parts } *preparation*

0.6 The dimensions for porcelain transformer bushings for use in heavily polluted atmospheres are covered by the series of IS : 8603-1977*.

0.7 The dimensions covered in this standard essentially apply to the bushings used outdoor with lower ends immersed in oil and suitable for use in lightly polluted atmospheres.

*Specification for bushings for alternating voltages above 1 000 volts (*second revision*).

*Dimensions for porcelain transformer bushings for use in heavily polluted atmospheres.

0.8 The performance requirements of the bushings are specified in IS : 2099-1986*.

0.9 In the preparation of this standard, assistance has been derived from the following standards issued by the Deutsches Institut für Normung.

DIN 42531 (1968) Indoor and outdoor transformer bushings:

Insulation class 10 N to 30 N, 250 A.

DIN 42532 (1969) Indoor and outdoor transformer bushings:

Insulation class 10 N to 30 N, 630 A.

*Specification for bushings for alternating voltages above 1 000 volts (*second revision*).

DIN 42533 (1969) Indoor and outdoor transformer bushings:

Insulation class 10 N to 30 N, 1 000 to 3150 A.

0.10 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard (Part 4/Sec 1) lays down the dimensions of porcelain parts of the bushings of 24 kV class used with transformers for use in lightly polluted atmospheres.

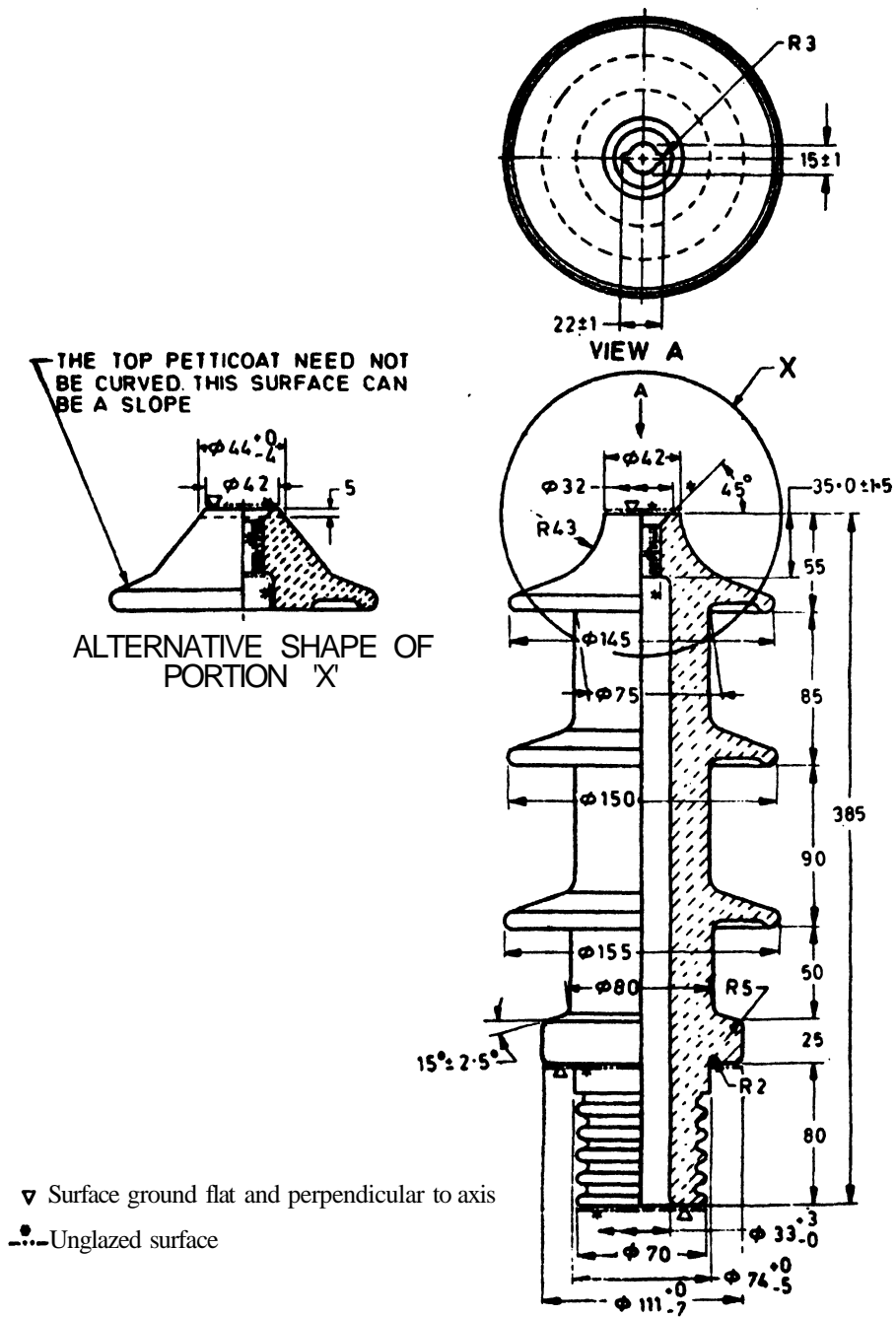
2. DIMENSIONS

2.1 The dimensions of the porcelain bushings for different ratings (kV/A) are given in Fig. 1, 2 and 3.

2.2 Unless specified otherwise, tolerance on a dimension shall be $\pm (0.03 d + 0.3)$ mm, d being the dimension in millimetres.

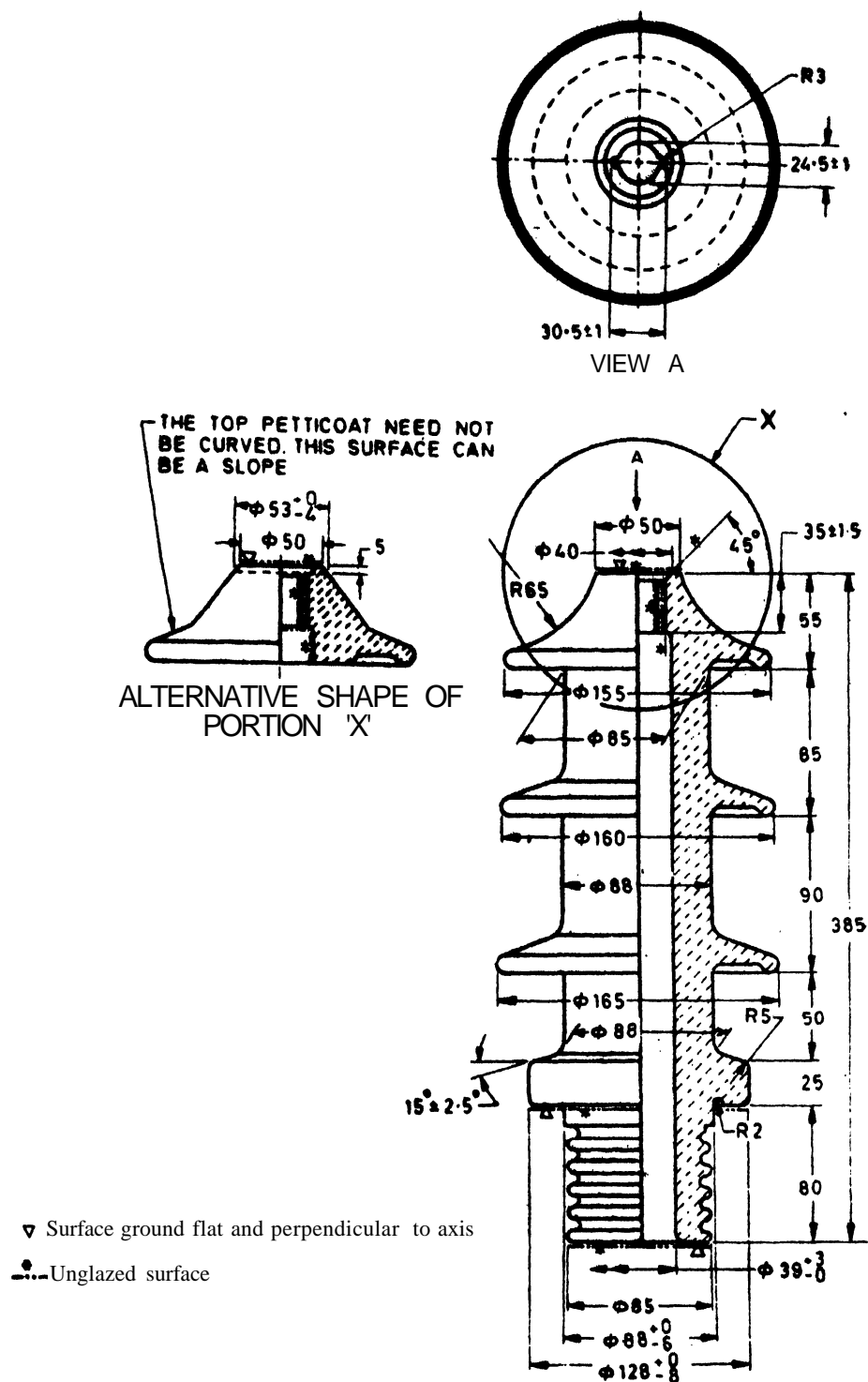
2.3 Whenever unilateral tolerance is given, that tolerance shall be twice the general tolerance, for example, dimension X_{\max} , shall have twice the general tolerance given in 2.2 for lower dimensions and no tolerance on upper dimension.

2.4 The minimum specific creepage distance shall be 384 mm (16 mm/kV).



All dimensions in millimetres.

FIG. 1 PORCELAIN PART FOR 24 kV/250 A BUSHINGS



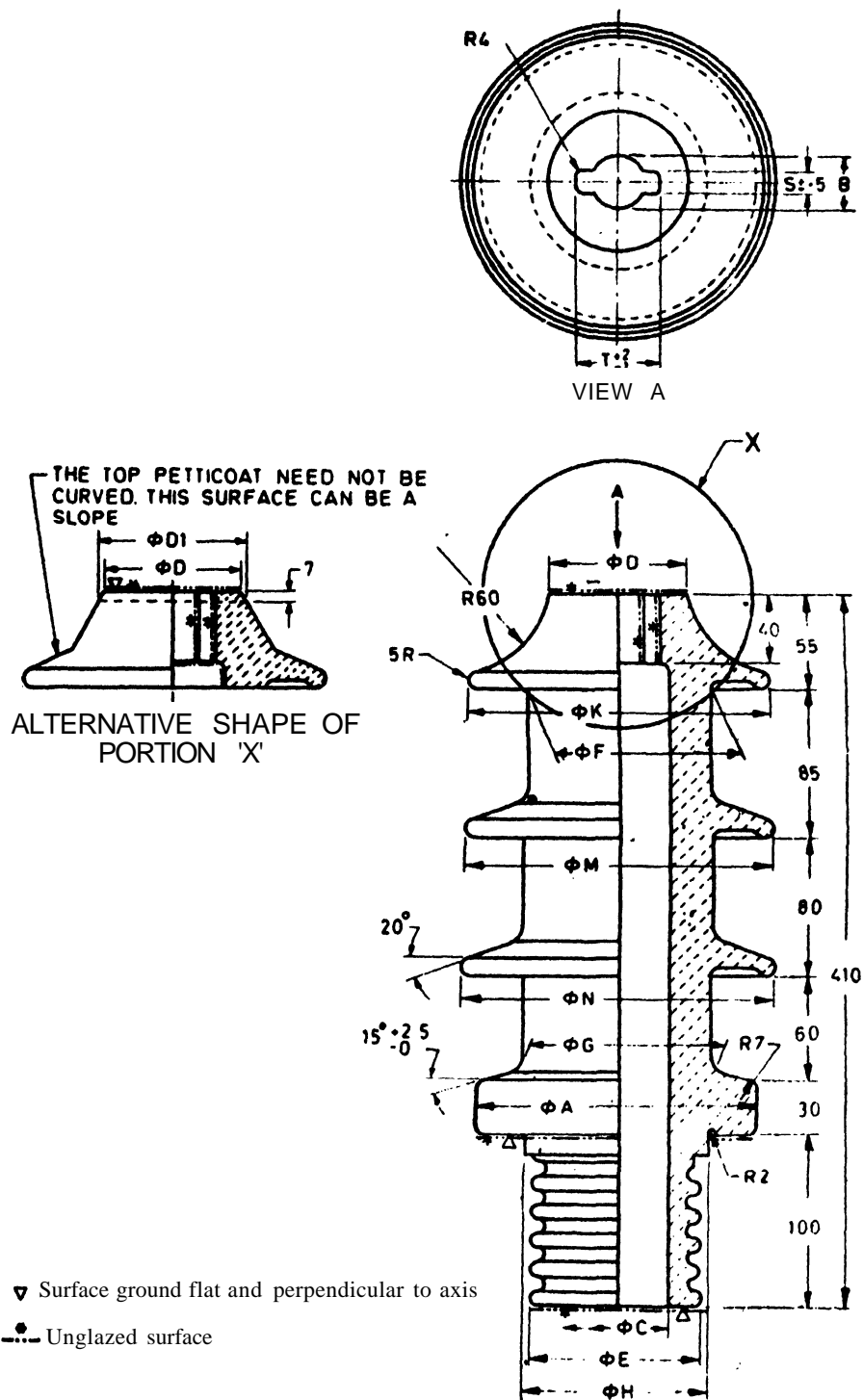
All dimensions in millimetres.

FIG. 2 PORCELAIN PART FOR 24 kV/630 A BUSHINGS

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(ET 06)

Reprography Unit, BIS, New Delhi, India



All dimensions in millimetres.

RATING kV/A	A	B	C	D	DI	E	F	G	H	K	M	N	S	T
24/1 000	163^{+0}_{-10}	32	58^{+4}_{-0}	80	84^{+0}_{-6}	100	105	110	108^{+0}_{-7}	175	180	185	12	46
24/2 000, 3 150	183^{+0}_{-12}	50	74^{+5}_{-0}	100	104^{+0}_{-7}	125	120	130	131^{+0}_{-8}	190	200	210	17	62

FIG. 3 PORCELAIN PART FOR 24 kV/1 000, 2 000, 3 150 A BUSHINGS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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